TREATMENT OF

SCARLET FEVER

AND

ITS COMPLICATIONS.

BY

J. HENRY FRUITNIGHT, A.M., M.D.,

NEW YORK.

[*Reprinted from the Archives of Pediatrics, December, 1889.*]

TREATMENT OF

SCARLET FEVER AND ITS COMPLICATIONS.

Because the subject of this paper is a broad one, and its discussion can be extended to an undefined limit, I shall invite attention more particularly to certain points, such as the treatment of the fever, the angina, and the specific complicating nephritis, otitis, and cervical cellulo-adenitis. Others will be cursorily touched upon. It is not anticipated that anything new or startling will be offered you in this article. What I have to say is based upon my clinical observations, made upon nearly one thousand cases of the disease occurring in my own practice during the last fourteen and a half years. These cases naturally have ranged in severity from those of scarcely a week's duration to those which have dragged their length into weary months. The collation and comparison of the clinical experiences of many practitioners ought to be both profitable and instructive. This last-expressed idea is therefore the *motif* of the present essay.

Fever of a higher or lower grade, and pharyngeal irritation more or less severe, are the pathological factors which will be met with in every case of scarlet fever. In every case of the disease, therefore, measures must be adopted to combat these conditions. I will discuss the treatment of the fever first.

It has been quite firmly established that the human organism can be subjected to a high degree of temperature and not succumb. Though this be true, it does not follow that a *laisser faire* policy must be pursued as regards the fever; for in my opinion, if the fever can be reduced by art, the patient is made correspondingly more comfortable, and whatever tends to increase the comfort of the patient assists in directing the attack of illness, as a whole, to a favorable termination. Before the introduction of the recently-discovered antipyretics,

it had been my custom to treat the fever with aconite. The preparation which I employed was the ordinary tincture of the root of the plant of the United States Pharmacopœia. I administered it in doses of one-half drop to one drop, according to the age of the patient, every hour in the beginning of the attack. When the fever had been reduced in consequence of its absorption, I prolonged the interval to every two or three hours, according to the register of the thermometer. Aconite is a remedy "which," as Dr. Charles S. Wood once aptly said in a discussion before the Northwestern Medical and Surgical Society of New York City on the use of this remedy in the treatment of pneumonia, "should go hand in hand with the thermometer." When the child is less than three years old I use the smaller dose, which is increased proportionally with older ones. When the temperature is very high, as 105° or 106°, I have employed with benefit the mode of administration of the remedy so highly recommended by Sidney Ringer, of London,—that is, one drop of the medicine is given every fifteen minutes for one hour, thereafter hourly two or three times, after which the interval is prolonged, and its further administration is to be decided by the thermometric record. Concerning the *modus operandi* of the drug I shall not speak, merely recalling the fact that it is classified as a cardiac sedative. Because of this depressing effect upon the heart, its use has been condemned by some able and celebrated physicians. I, however, have never had any bad results from its use. In the milder cases of the disease, and in cases occurring in robust patients, the system was enabled to tolerate the medication. In cases of an adynamic type, stimulating treatment was also very soon inaugurated, which *pari passu* helped to mitigate, if not to prevent, any deleterious effect of the remedy on the heart's action.

The reduction of the temperature was always quite speedy. Without entering upon a detailed history, I will quote from my case-book the daily temperatures of several cases.

	First Day.	Second Day.	Third Day.	Fourth Day.	Fifth Day.	Sixth Day.
Case I.....	103°	101½°	101°	100°	98¾°	98½°
Case II.....	102°	101½°	100°	98¾°	98½°	98½°
Case III.....	103°	101°	100¼°	100°	99½°	98½°
Case IV.....	101½°	100½°	100°	100°	100°	99½°

Many more could be cited to show the gradual daily decline of the fever under the use of the aconite in the doses mentioned, but I must forbear, lest the tedium of their recital should become wearisome.

When the phenic series of antipyretics were introduced, I abandoned the use of aconite, and employed the former in the treatment of scarlet fever. My experience both with dimethyloxyquinizine (antipyrin) and acetanilide were not so favorable as with aconite. True, the fever was diminished, but my cases did not appear to do so well generally. It seemed to me that the reduction of the fever was accomplished at the expense of the vitality and general well-being of the patient. My patients seemed to suffer more discomfort and prostration, while at the same time the respiratory centres seemed to be unfavorably affected, as evidenced by palpable signs of anxious dyspnœa. Cardiac syncope was also threatened in a number of cases. The doses were not large, averaging from two and a half to five grains. I am not prejudiced against these remedies, for it is my impression that I was the first physician in this country to use antipyrin for fever, and in the first public report here in America on its action, which was made by me on October 15, 1884, before the Northwestern Medical and Surgical Society of New York City, I spoke very enthusiastically about it, though it was derided by the late Professor Austin Flint at that very meeting.* But for the reasons alluded to I soon forsook the treatment with these newer antipyretics, and resumed that with aconite. My later experience with this remedy only corroborated my former observations, and strengthened me in my belief that aconite was the best febrifuge to be employed in the treatment of scarlet fever.

With the hydropathic treatment of scarlet fever I have had no experience, since none of my cases have exhibited extreme hyperpyrexia, and the medicinal agents have always been able to reduce the temperature sufficiently in other cases. In the average case of the disease, however, I would hesitate

---

* *New York Medical Record*, vol. xxviii. p. 364, and vol. xxix. p. 648.

very much before applying this method of treatment, because I think that other remedies are preferable. Only when the case had become desperate, and death from hyperpyrexia stared the patient in the face, could I be induced to resort to it.

During the recent epidemic of scarlet fever last winter and spring in New York City, of sixty-three cases of the disease treated by me with aconite, only three died, all of which were caused by severe cerebral complications, terminating fatally within the first three or four days of the attack.

When moderate hyperæmia of the throat exists, very little treatment is necessary, yet it is neither safe nor judicious ever to ignore even a mild angina. Small doses of chlorate of potash, from one-half grain to three grains, proportioned to the years of the child, either dissolved in water or placed dry on the tongue, will suffice. If the anginose condition be more severe, the addition of a few drops of the tincture of chloride of iron to the first-named medicine will be beneficial. If the pharyngeal inflammation be of a severer grade still, larger doses of the martial tincture should be given, even to the extent of twenty drops per dose, in combination with the chlorate of potash.

The chlorate of potash must, however, always be used with circumspection in children, for they are much more susceptible to its toxic action than adults, lest, if too large doses be permitted, serious nephritic lesions may be produced. In my opinion a child should never receive more than three grains at a dose.

If follicular deposits appear in the crypts of the tonsils, I ordinarily prescribe the hyposulphite of soda, in doses varying from two to five grains, dissolved in a teaspoonful of some aromatic water. When extensive exudations of a diphtheritic character are present, I have been induced to use, because of the good results obtained with the remedy in the treatment of diphtheria and diphtheritic croup, the bichloride of mercury; and in the treatment of scarlatinal exudative angina, I must confess that equally satisfactory results have been obtained.

When these remedies seem tardy in their action in the cases in which the throat is severely involved, I have supplemented

their use with local treatment, applied by means of the spray atomizer. For its solvent action I use trypsin in the presence of an alkaline solution, and for its disinfectant and deodorant effect, Lugol's solution in the atomizer, alternately. In all cases accompanied by fetor of the breath I use either the Lugol solution or a solution of carbolic acid as a spray for its correction, whether the case be mild or grave. The treatment of the exterior of the throat will be considered in another connection later in this paper.

In the course of any case, simple as well as severe, of scarlet fever, one must not be astonished to be suddenly confronted with any variety of complication, for the specific cause of the disease is of such virulence that the point of weakest resistance in the patient's organism will most likely be called upon to withstand its assaults. The most usual complications are acute nephritis with dropsical effusions and albuminuria, acute otitis media, and cervical adeno-cellulitis. I have named them in the order of frequency in which they have fallen under my observation.

In the treatment of the renal complication, which has occurred in about six per cent. of my cases, I insist upon the observance of three cardinal principles,—namely, rest in bed, warmth of the surface of the body, and an unrestricted milk diet.

When the urinary excretion is diminished and œdema coexist, I administer a diuretic, preferably the acetate of potash, in the usual doses, combined with the tincture of digitalis. At the same time free catharsis is procured by the administration, at frequent intervals, of small doses of the solution of citrate of magnesia in younger children, and the compound jalap powder in combination with an additional quantity of calomel for older ones. When hæmaturia is present, which I have seen quite frequently, I have sometimes given, with benefit, gallic acid, in three-grain doses, repeated every three hours. At other times five drops of the colorless hydrastis in a teaspoonful of water every three hours has been efficacious to arrest the bleeding. I also order a daily counter-irritation of the region of the kidneys by means of sinapisms. When there is great general anasarca and abdominal ascites, threaten-

ing interference with respiration and circulation, in addition to the free purgative, hot vapor-baths are prescribed. These hot baths are applied in the following manner. The patient, stark naked, is laid upon a blanket, and immediately one or two bricks, which have been in the mean time thoroughly heated by immersion in pails of hot water, and then enveloped in flannel cloths, are placed both at either shoulder and at the feet, care being taken that they are not put too near the body, lest the patient be scorched. Another blanket is then thrown over the patient and the bricks. The upper corners of the superimposed blanket are brought over and tucked under the opposite shoulders, while the other end of that blanket, with the lower end of the underlying one, are lapped together under the heels of the patient, and the head alone is left to protrude from this improvised sack. The patient is retained in this hot pack for at least twenty minutes. It is resorted to once or twice daily, according to the urgency of the symptoms. Profuse diaphoresis directly occurs when the patient is submitted to this treatment, always resulting in a marvellous amelioration of the alarming and distressing symptoms accompanying dropsical effusions. The patients and their friends are apt to complain loudly of this heroic treatment, but I can recollect several instances where the child's life was saved from imminent death by it. This hot bath will often accomplish the end sought when all other measures have failed, and this knowledge is the justification for its employment, in spite of such protestations.

As an able adjunct to this diaphoretic treatment, pilocarpine muriate hypodermically and the fluid extract of jaborandi *per orem* have been employed by me.

The occurrence of symptoms expressive of uræmic intoxication demands the remedies appropriate thereto. The convulsions I treat preferably by means of rectal injections of chloral hydrate, of the strength of five grains to a drachm of water. This dose is thrown into the rectum every fifteen minutes until the convulsions shall have ceased. Coma I have always combated by speedy and active purgation, by the administration of a fraction of a drop of croton oil suspended in a blander oil, which is placed far back on the tongue. At the

same time the patient is subjected to the vapor-bath previously described.

Finally, when the more acute symptoms of the renal complication have abated, I without delay put the patient upon some chalybeate preparation, which is to be continued for a considerable period of time. I always begin with the muriated tincture of iron, and later follow it with the compound citric acid preparations of iron with ammonia, quinine, or strychnia, according to the special indications of each individual case. Occasionally the patient will not tolerate the tincture of the chloride; then I substitute for it the acetic tincture of iron of the German Pharmacopœia, with better results. With this line of treatment I have lost but three cases of scarlatinal nephritis since I have been actively engaged in practice, which is a mortality of extremely low per cent. for that complication.

Though it be the opinion of many that a scarlatinal otitis will take care of itself, yet the numerous individuals with impaired hearing, traced back to an attack of scarlet fever, whom we meet, demonstrate how fallacious this view is. Even slight attacks of ear-disease occurring in the course of scarlet fever must not be disregarded. The aural complications may be varied in nature and location. The most usual one, however, is an otitis media, either catarrhal or purulent, and occasionally diphtheritic. When tenderness and pain are complained of in the region of the ear, and symptoms of inflammation are developing, I make use of warm fomentations to the part, in the form of flannel cloths wrung out of either plain hot water or out of a decoction of either poppy-heads, chamomile, or hops. In the auditory canal a solution of warm salt-water is instilled, to which I have sometimes added a few drops of some opiate, or of a twenty-per-cent. solution of muriate of cocaine, the amount to be graduated to the acuteness of the pain. When the mastoid process of the temporal bone becomes involved, and is hot, tender, and swollen, I apply a leech to the part, which soon relieves the tension and congestion. If the pain should be referred to the tragus, the leech should be used there also. By filling the meatus with cotton, the leech cannot slip into the ear. If the patient have hæmophilic tendencies, the bleeding from the leech-bite may give rise

to difficulty in its arrest. I met with such an example a few months ago, in which for nearly two hours I was unable to stop the flow of blood.

If by inspection in severe cases we can satisfy ourselves that the tympanum is projecting and is highly congested, presenting the appearance as though pus was accumulating behind it, the membrane should be incised, to liberate the imprisoned matter. This procedure will be followed by a great alleviation of the patient's symptoms. Even if no pus be present, but an intense hyperæmia only, *paracentesis tympani* should also be done, because by the release of the blood the patient's symptoms will greatly improve. When otorrhœa is profuse, whether of offensive odor or not, it is necessary to keep the auditory canal clean and free. In the simpler cases lukewarm saline solutions are indicated, and when fetor is present the addition of a disinfectant and deodorizer, such as boric acid, carbolic acid, Labarraque's solution, or permanganate of potash, in sufficient strength, should be added. I have used all of them at various times. This washing-out of the canal I advise to be done several times daily. After its completion the ear is gently wiped out with absorbent cotton, plain or medicated. Insufflation of the dry powders I do not use, because I think they would interfere with the free drainage and outflow of the discharges, and thus, perhaps, favor a possible extension of the inflammation to deeper structures, and even to the meninges.

After all acute symptoms have passed by I make use of astringent solutions to arrest the residual otorrhœa, usually a solution of the nitrate of silver of five or ten grains to the ounce of water. Of this solution a drachm is added to a pint of lukewarm water, the whole of which quantity is used at one sitting, and the operation is repeated three times daily. After the syringing has been done and the canal wiped dry, I instil in the ear three to five drops of sweet almond-oil, which has been gently warmed in the following way. A teaspoon is dipped in warm water; the drops of oil are poured into the spoon thus warmed, and from it let fall into the ear. I forbid the introduction of cotton pledgets into the ear, but at the same time caution strongly against the exposure of the affected

side to direct currents of cold air. The course of treatment thus conducted has always given me the best results and the greatest satisfaction in the management of aural complications.

In the treatment of disease one can do too much oftener than too little. This reflection applies with great force to the treatment of cervical cellulo-adenitis. When the laity observe the swelling and the œdema on the exterior of the neck, the temptation is to do a great deal and a great variety of things to relieve it. But what is the result? By their rude and energetic, though well-meant, manipulations, the inflamed structures are bruised and further irritated, the inflammatory action is increased, and the very result follows, in consequence of their active maltreatment, which they had hoped thereby to prevent, or at least to dissipate. When there is simple enlargement of the glands of the neck, with but moderate infiltration into the surrounding cellular tissue, I tell my patients to let it be, to do nothing, for nature will probably be able to cause absorption of the diseased products by the time that the attack of illness shall have run its course. Usually my prediction is verified. When the inflammation is of a severer type, I prescribe an ointment composed of slightly carbolized lanoline or vaseline, which is to be gently stroked with the finger-tips, but *not rubbed*, over the swelled tissues. The ointment should be heated a little. I emphasize the injunction that it must not be rubbed, lest by such pressure irritation should be produced, which should be avoided. If, however, appearances indicate that absorption will not take place, and suppuration threatens, then I order hot flax-seed and slippery-elm poultices to encourage it. As soon as fluctuation is palpable a free incision should be made and the pus thoroughly evacuated. The resulting wound and cavity are then irrigated with a phenated solution of the strength of one to a thousand, after which the poultices are continued for a short period. When it is evident that suppuration has terminated, basilicon ointment, impregnated with a few grains of iodoform, is applied to the wound until it shall have healed. The disinfectant irrigations are also repeated at intervals until the final closure of the incision. It is interesting in this connection to refer to the case of a little girl, five years old, who came under

my care with an attack of scarlet fever during April last. She suffered with a bilateral cervical adenitis. On the right side the œdema extended up over the angle and ramus of the jaw, over the cheek and molar bone to the upper eyelid, causing the eye to close. Much to my surprise, suppuration did not occur, but with the gentle treatment outlined above the exudation was by degrees entirely though slowly absorbed. On the other hand, on the opposite side, which was not so highly inflamed, the tissues took on suppurative action, requiring incision for its cure. Though this patient subsequently also developed nephritic and rheumatic complications, she is to-day entirely well, having successfully recovered from the entire train of dangerous lesions. Though it may be a digression, I cannot forbear at this juncture to speak of the most formidable case of cervical adeno-cellulitis which has ever come under my observation. The patient was seen by Dr. J. Lewis Smith and myself in consultation. He was between three and four years old, and had passed through several weeks of an attack of scarlet fever, during which time he had been treated by another physician. We found that he had had an extensive cervical cellulitis on the right side, which had been accompanied by such profuse suppuration and deep ulceration and sloughing, that a cavity large enough to hold an egg had been excavated. At the bottom of the cavity the pulsating carotid artery lay exposed to our gaze, and its coats also were already quite deeply involved in the gangrenous process. We knew of nothing to hinder the fatal issue; ligation would have been a delusion and a snare. Early on the following day the vessel opened, and in a moment death claimed his own. I do not know whether a parallel case is on record, and its rarity has induced me to relate it at some length.

As already intimated, any form of complication may be expected in scarlet fever; among the less rare is acute articular rheumatism, for it is met with quite often. Its treatment does not vary at all from that suitable in cases of the regular idiopathic form of the disease. The salicylates have given the best results in my hands, especially when alternated with alkalies. The tendency of the rheumatism to involve the cardiac muscle and its sac in its embrace is not increased,

because it assumes the *rôle* of a complication of scarlet fever. Certainly, one must be on the alert to forestall as far as possible any such trend of the rheumatic poison by watching the heart, and, on the slightest suspicion that such a contingency is to take place, treatment proper to oppose it must be at once inaugurated.

As regards the chorea, which not infrequently follows this combination of scarlet fever, rheumatism, and heart difficulty, I would state that I have followed up the treatment just alluded to with the administration of arsenic and iron for the choreic condition, and of the bromides, sometimes reinforced with chloral hydrate, to control the excessive nervous excitation.

The most formidable and most fatal complication of scarlet fever which we are called upon to face, is, in my opinion, acute cerebral meningitis, or encephalitis. The symptoms of this complication are in the majority of cases developed early in the course of the disease, and always with great intensity. The prognosis is always much more grave and unfavorable than when the cerebral affection is primary. Whether the aggressive character of the complication is due to a profound saturation of the patient's system with the specific disease, entity of scarlet fever, or to this particular localization of inflammatory action in the course of the fever, I am not prepared to say. True, hyperpyrexia is commonly present in these cases, but I do not think the usually severe course and fatal result are to be attributed to this factor. Treatment of this complication is very unsatisfactory, and I regret to say almost always without avail. Iced applications to the head, the bromides, chloral, and opium in guarded doses, to control the congestion and restlessness, in conjunction with the routine treatment of the fever, constitute the measures which I have employed.

Several cases of acute pleurisy with effusion have also come under my notice as a complication of scarlet fever, independent of serous effusions attending renal disease. They terminated favorably, the effused liquid having been reabsorbed in consequence of a tonic treatment, aided by the exhibition of diuretics, mild cathartics, and counter-irritation to the chest.

I have had very few complications of the eye, indeed, and

none at all of a serious character. In these mild cases the treatment was not modified in any way, but carried out as though the eye affection was a primary disease.

The vomiting, which is usually the initial symptom of scarlet fever, does not call for any special treatment, for it will cease spontaneously as soon as the stomach shall have been emptied of its contents. In a few cases anorexia persisted, but it was finally controlled with ice-pills, bismuth, and lacto-peptine, and carbonated drinks.

Diarrhœa is more apt to complicate the disease than constipation. In a number of cases I have witnessed an almost intractable dysentery, which required very energetic treatment before it was checked. I can recollect one case last winter in which the dysenteric discharges continued for nearly three weeks. In simple diarrhœa the milder astringents and corrigents, as chalk mixture, bismuth, acetate of lead, with paregoric, have always been efficacious. In the graver forms of dysentery, I have obtained the best results from the administration of the elixir of coto bark, in doses ranging from ten or twelve drops to half a drachm in a teaspoonful of water, repeated hourly. When pain and tenesmus are prominent symptoms, I add to the coto from one-half to two drops of Squibb's liquor opii compositus, which is discontinued as soon as those symptoms have disappeared. The opium is given every two or three hours as the urgency of the symptoms indicate. If the patient betray any symptom of narcosis, or undue susceptibility to the action of opium, careful watching is necessary, and it must be abandoned before its dangerous effects should ensue.

For the constipation any of the milder cathartics will do, but what I have used with satisfaction are the suppositories of glycerin, which have been lately brought into use.

Whatever other complications, and to which I have not alluded, may occur, they must be treated in accordance with those principles which their symptoms and location may determine; for, as this paper is founded on my own experiences in the treatment of this disease, I have treated chiefly of those complications which actually fell under my care.

It yet remains to consider certain general principles of

treatment applicable to the management of the disease. Isolation of the infected individual is the only prophylactic treatment of which I know. This quarantine must be an honest one, and must be maintained until the period of desquamation shall have been fully completed. The attendants are also to observe certain obvious restrictions as regards intercourse with the outside world, clothing, and other minutiæ, with which we are all familiar. The sick-room must be properly and sufficiently ventilated, and not so hot as the patient's family are prone to have it for fear that the patient may "take cold." Scrupulous cleanliness about the body-linen and bed-clothing is to be strictly enjoined. The diet should be a liquid and easily-digestible one, suitable to the age and the condition of the patient. If the attack be a mild one, stimulation can be dispensed with; but when it threatens to be severe or prolonged, I do not wait until my patient is debilitated before resorting to stimulants, but I at once begin with them, in order to counteract any such tendencies, and continue their use, until convalescence has been firmly established. I employ alcohol, preferably in the form of whiskey or champagne, and augment its action by the exhibition of digitalis and sparteine sulphate. These two last-named remedies I often combine in the same menstruum, allowing from two to five drops of the tincture of digitalis and from one-sixty-fourth to one-tenth grain of the sulphate of sparteine, for instance, in a drachm of camphor-water every three or four hours. Sometimes, when great prostration is imminent, I prescribe the aromatic spirits of ammonia, in addition to the other cardiac stimulants, in doses of from three to twelve drops in a teaspoonful of water, every fifteen minutes, until the patient shall have revived. In such cases the food is also administered in as concentrated a form as possible.

The ordinary disturbances of the nervous system dependent upon the presence of fever, the common antispasmodics, as the bromides and the like, will control.

To allay the itching of the skin I have at times employed inunctions of feebly-carbolized white vaseline. But it has often been a question with me whether it did not interfere with desquamation and retard the necessary activity of the

skin. I have therefore often substituted for them, when desquamation began, a course of mildly antiseptic tepid baths, either carbolated or sublimated, which seemed to me to hasten the desquamative process, and to produce a healthier action of the skin.

When the eruption is faint or tardy in its appearance, or when it shows a tendency to fade away, in the vernacular "to strike in," I have resorted to warm baths, to which mustard has been added, and to the application of sinapisms to the various portions of the body which appear to be the palest; besides which, ammonia is administered internally. In the majority of cases the eruption then resumes its brilliancy.

The patient must be confined to the house, even in the very mildest type of scarlet fever, and must be protected against all exposure to the vicissitudes of the weather.

The general management of the patient, after having passed through the attack, will, from the nature of the case, consist mainly of tonic and sustaining measures, coupled with a proper observance of hygienic principles.

ARCHIVES OF PEDIATRICS

A MONTHLY JOURNAL DEVOTED TO THE

DISEASES OF INFANCY AND CHILDHOOD.

EDITED BY

WM. PERRY WATSON, A.M., M.D.,

Attending Physician to St. Francis's Hospital and to the Central Dispensary (Department of Pediatrics); Consulting Physician to St. Michael's Orphan Asylum, etc., Jersey City, N. J.

THE ONLY MEDICAL JOURNAL IN THE ENGLISH LANGUAGE DEVOTED EXCLUSIVELY TO THE DISEASES OF INFANTS AND YOUNG CHILDREN.

Containing nearly 1000 large octavo pages per annum.

THE contents of each number will be arranged as follows, viz.: three or four scientific articles by the ablest teachers of pediatrics in this country and in Europe. The remaining space will be devoted to a brief, practical résumé of the current pediatrical literature of the world, distributed in the following departments, viz.: 1. Hygiene and Therapeutics. 2. Medicine. 3. Surgery. The publishers are pleased to announce that the very interesting and valuable series of articles on the

THERAPEUTICS OF INFANCY AND CHILDHOOD,

By A. JACOBI, M.D.,

Clinical Professor of Diseases of Children in the College of Physicians and Surgeons, President of the New York Academy of Medicine, etc.,

which began in the January number, 1888, will be continued during 1889. The plan and scope of these articles are given in the following extract from Prof. Jacobi's letter to our editor:

"I will prepare an essay of ten or twelve pages for every monthly issue of your journal. The subjects will be therapeutical. The first paper will probably contain general principles in their application to the disorders of early age. The following will treat of the therapeutics of the diseases of the newly-born, of developmental and infectious diseases, those of the organs of circulation and respiration, genito-urinary organs, stomach, and other abdominal viscera, muscles and bones, skin, nervous system, etc. Other subjects which will be treated of afterwards are certain classes of remedies, such as anæsthetics, narcotics, anti-febriles, purgatives, absorbents, roborants and stimulants, etc. If there be time and room, the most interesting diseases, such as epilepsy, chorea, whooping-cough, and growths, may become the subjects of special papers."

The series of practical articles on the

MEDICAL DISEASES OF THE MOUTH IN CHILDREN

By F. FORCHHEIMER, M.D.,

Professor of Physiology and Diseases of Children, etc. (Medical College of Ohio), Cincinnati, O.,

which began in the September number, 1888, will be concluded during 1889.

It is the intention of the writers of these articles to complete a subdivision of their respective subjects in every number of the ARCHIVES, so that each issue will contain the mature observations of these distinguished authors and teachers upon their respective special subjects.

Subscription Price, $3.00 per Year.

The volume begins with the January number, but subscriptions may begin at any time.

J. B. LIPPINCOTT COMPANY, Publishers,

715 and 717 Market Street, Philadelphia.